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Watts Up? Grumman Opts For Private Power

Co-generation facility to provide electricity and steam for Bethpage complex on Long Island

Grumman plans to build its own co-generating plant to provide electricity and steam for the company's main complex in Bethpage, Long Island.

The plans call for the construction of a power plant at Bethpage that will generate 25 megawatts of electricity – approximately half of the total power consumption for Grumman's Long Island operations. In 1984, the Bethpage complex consumed 36 megawatts out of a total of 56 megawatts used by Grumman on Long Island.

Grumman pays about $25 million a year for electricity, most of which it receives from the Long Island Lighting Company (LILCO), with some power coming from the State Power Authority's Fitzpatrick nuclear power plant in upstate New York.

LILCO currently charges about 8.5 cents per kilowatt hour while the State Authority's power costs about 5.5 cents per kilowatt hour. Grumman's average cost per kilowatt hour is 8.4 cents.

The Grumman power plant would provide electricity at an average cost of 5 cents per kilowatt hour – about 40 percent less than what the company is currently paying for power. Grumman expects to recoup the cost of the private power plant – estimated at approximately $20 million – within approximately three years through savings on electricity bills at Bethpage.

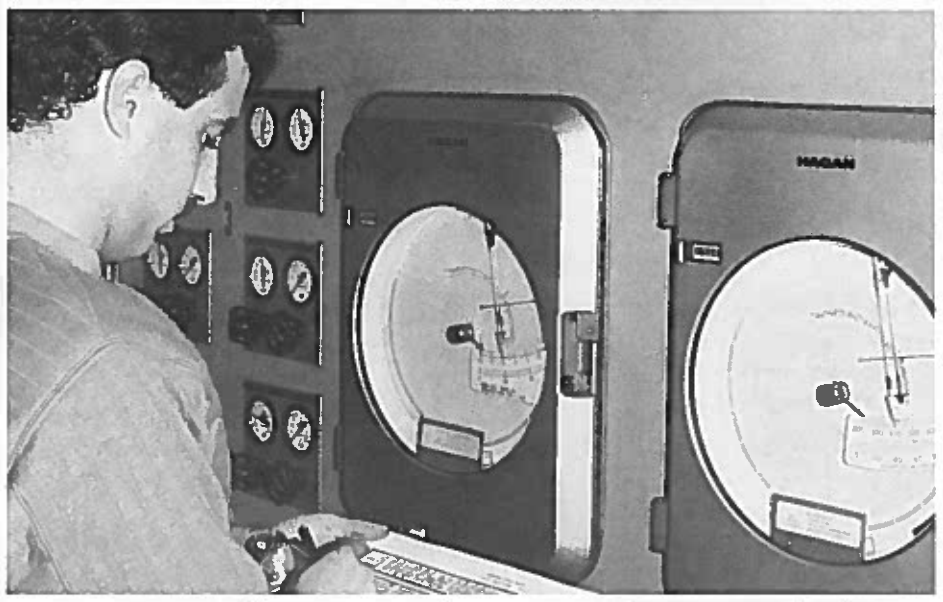
The decision to consider construction of a private power source stems primarily from rising Long Island power rates – already among the highest in the country.

LILCO has been seeking substantial rate increases to cover the costs of its as yet unopened Shoreham nuclear power plant. The utility is also looking to pass on to consumers the cost of repairing damage to its equipment incurred during Hurricane Gloria.

Construction of Grumman's power plant is tentatively set to begin in the first quarter of 1987 with the facility coming on line in the summer of 1988.

The plant will be a co-generation facility, producing electricity with steam as a by-product. Steam is used to heat offices and in manufacturing processes such as aluminum and titanium chemical treatment baths. The new plant will be located adjacent to an existing steam plant at the south end of Bethpage's Plant 5. That facility produces up to 140,000 pounds of steam per hour using three oil and natural gas fired boilers.

A decision is still pending as to whether the new power plant will use diesel fuel or natural gas.



Electrifying Idea. *Boiler operator Philip Cappuzzo checks pressure readings in the steam plant at the south end of Plant 5 in Bethpage. Grumman plans to build a co-generation plant adjacent to the existing steam plant to produce 25 megawatts of electricity for the Bethpage complex. The new plant will also produce steam for heating and manufacturing processes.*

More than 15,000 Grumman people work at the Bethpage complex, which has more than 40 buildings. The proposed power plant would supply electricity to all buildings currently on the company's existing power transmission system.

Over the past two years, Grumman has invested a significant amount of money modernizing its plants and equipment on Long Island to handle an increased work load – notably the A-6F and F-14D upgrade contracts from the U.S. Navy.

While most of the new machines and facilities are more energy efficient, the increased work load is expected to raise the company's overall consumption of electricity. In addition, the proliferation of computers throughout the company is expected to add to energy needs. ■

Bubble Makers. *Topping off Tomcats with crystal clear plexiglass bubbles is the job of the Canopy Shop in Bethpage's Plant 1. In the foreground, mechanic Russ Baisley installs a thick rubber seal to the inside of a canopy window. Behind him, mechanic John Butts covers a completed bubble section to protect it from scratches. The canopies are made of three layers of tough plexiglass – one flexible sheet sandwiched between two tough outside layers. Each bubble takes more than 300 hours to produce. When completed, most are shipped to the final assembly line in Calverton (L.I.) for installation on production F-14s. Others are sent directly to the Navy as spares for the fleet. (Photo by Bob Settles)*

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Can A Better Metal Be Made In Space?

Grumman experiment to fly aboard next Shuttle mission

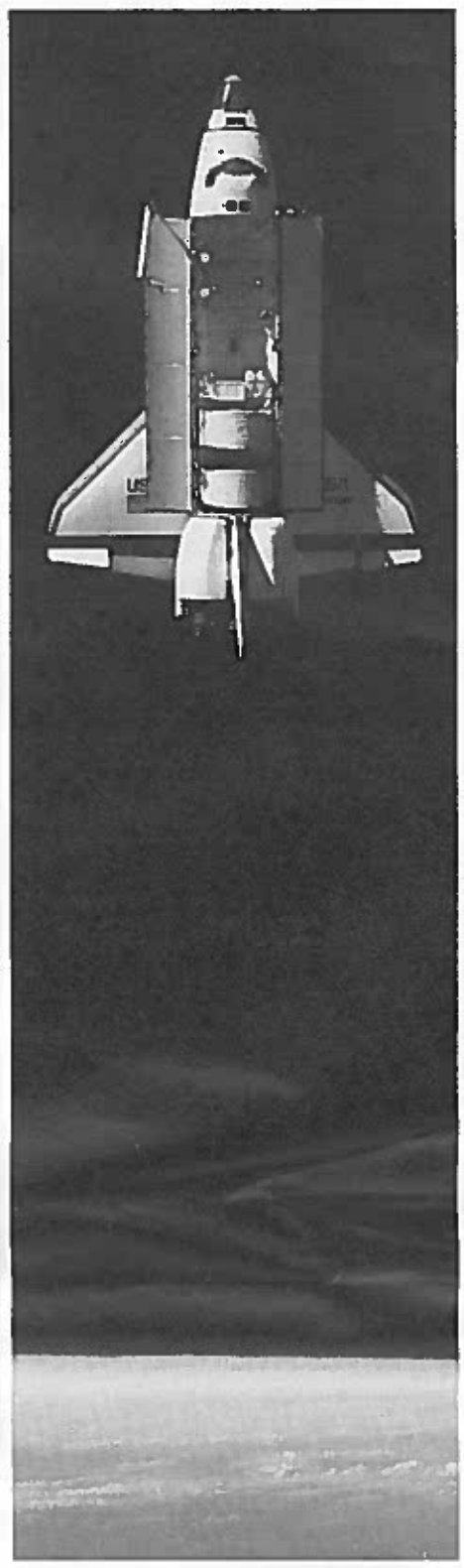
The second of four Grumman materials-processing experiments will fly aboard the next mission of the Space Shuttle *Columbia*.

Columbia will be launched from Kennedy Space Center on Wednesday, December 18. Grumman's Orbital Processing of Aligned Magnetic Composites project is one of three crystal growth experiments aboard this Shuttle mission. The Grumman project actually consists of several closely related experiments. They will be conducted on the Shuttle's Material Science Laboratory carrier, located in the payload bay.

An automated directional solidification apparatus will be used for Grumman's experiments. The objective is to determine whether materials, metals, and crystals processed in a weightless environment will be superior to their best earth-made counterparts. If so, in the next decade, such materials could be made commercially on free-flying satellites or on the Space Station.

The flight experiment apparatus development and the research is sponsored by NASA's Office of Materials Processing in Space, Marshall Space Flight Center, Alabama. Grumman's Corporate Research Center is also funding the project.

Dr. Dave Larson, Grumman staff scientist and program manager — Materials Processing in Space, is principal investigator for the experiments. He's being assisted by Grummanites Bonnie Dressler, William Poit, and Dr. James Bethin. ■



What A View! *This photo of the Space Shuttle* Challenger, *with its payload bay doors open, was taken by a 70mm camera aboard the unmanned, free-flying Shuttle Pallet Satellite. Grumman experiments will fly aboard the next flight of* Columbia. *They will be housed in cylinders near the middle of the bay.*

Signs, Badges Changing To Reflect The New Grumman

When the blue paint and blue ink are dry, signs, stationery, trucks, and other items bearing the company name will look different – if only slightly.

The changes reflect the restructuring of the company earlier this year. Signs at most company locations will soon read simply "Grumman."

Gone, for example, will be the "Grumman Aerospace Corporation" signs at various entrances to the Bethpage complex. In their stead will be "Grumman" signs bearing the familiar company logo.

"We want the public to think of Grumman as one company, rather than a collection of companies," says Bob Myers, Grumman Corporation senior vice president – Corporate Services. "At the same time, we want our customers to identify with the division with which they do business – which was one reason the company was restructured earlier this year."

Thus, for business considerations, the signs at sites occupied solely by one division will continue to designate that division. Some examples: the Data Systems building in Holtsville, and the St. Augustine Division in Florida.

It was originally hoped that forms such as expense reports, travel requests, and local travel reports could be changed immediately. These are replete with references to the old subsidiaries.

"However, there are a signifcant number of forms that would be affected, and the cost of replacing them immediately would be prohibitive," says Myers. New forms will be designed and printed as existing supplies are depleted.

Early in 1986, many Grummanites will be issued new ID badges. In keeping with Department of Defense practice, the new badges will designate divisions.

"In the DoD's view, if Grumman badges designate divisions, an employee of a division that handles defense work will know not to discuss classified information with an employee from one that doesn't," notes Myers.

Because certain inter-division transfers are expected in the normal course of business, Grumman is investigating the use of a generic badge with interchangeable division markers.

The change will primarily affect Grummanites who wear old "Aerospace" badges. For the most part, people in the other divisions are still working for the same organizations – so they'll initially keep using the same badge.

The change also will coincide with the rebadging that is being done to conform with the current 10 percent cutback in employee security clearances – a move directed by the Defense Department.

On an ID badge, a red background behind the photograph means the wearer is eligible to have access to classified data, provided a need to know exists as well. A blue background means the wearer is not eligible to have access.

Many Grummanites will also notice a change in their department numbers. For all divisions derived from the Grumman Aerospace subsidiary, the first digit of the four digit department number will be used as a prefix for division identification.

The following prefix numbering scheme has been established for 1986.

In *Aircraft Systems*, the prefixes are zero and one. Department examples: 0936 and 1936.

In *Electronic Systems*, the prefix is two. Example: 2936.

The prefix for the *Space Division* is three. Example: 3936.

The *Service Division* prefix is five. Example: 5936.

The *Aerostructures* prefix is seven. Example: 7936.

The prefix for *Melbourne Systems* is eight. Example: 8936. ■

Personals

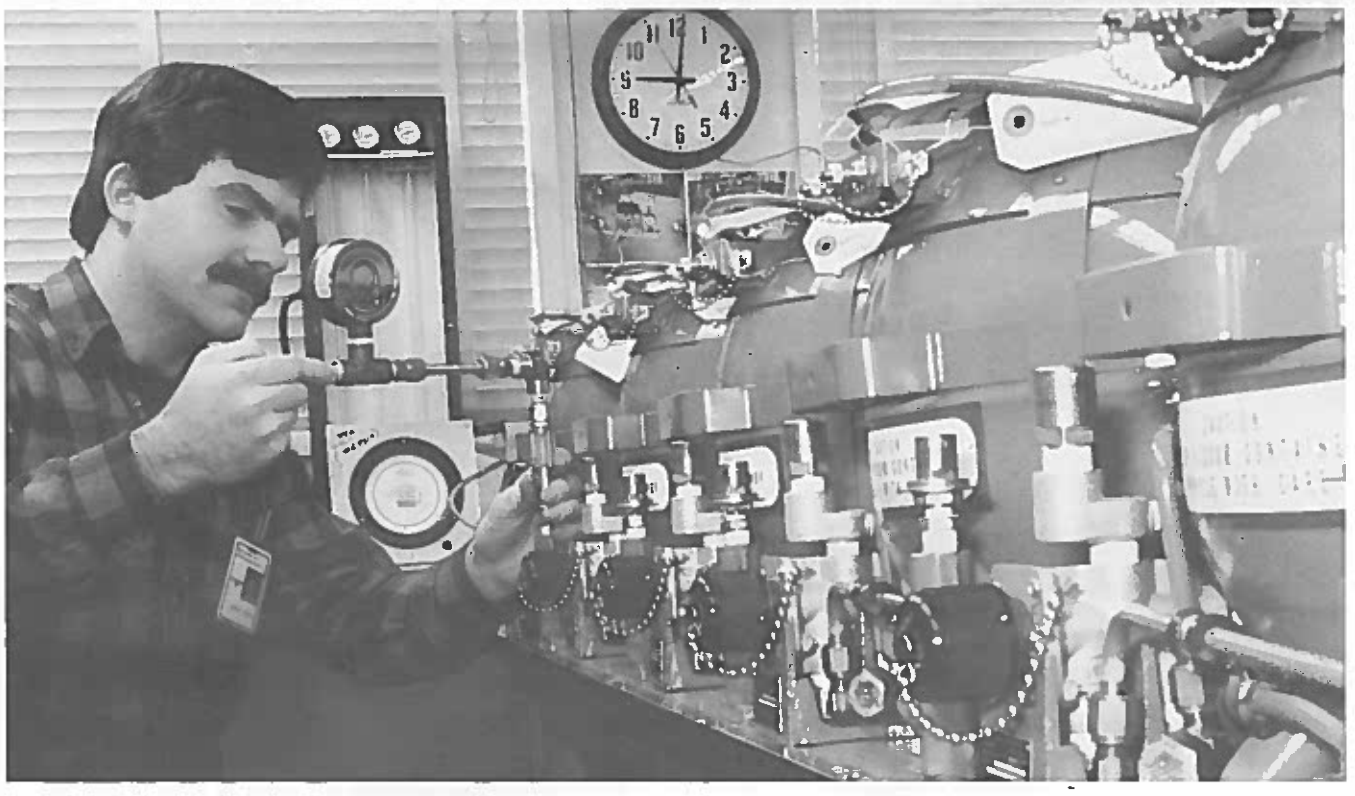
My family and I wish to express our sincere appreciation to all our friends, co-workers and ESO for their thoughtfulness and sympathy during the recent loss of my father. **Dan Stollow**

The family of Ernest Maggi would like to express their appreciation to all of his friends, co-workers and ESO for their kind expressions of sympathy during our loss. **The Maggi family**

We wish to thank all of our friends in Grumman and the ESO for the gifts and flowers given in memory of our mother and grandmother. **Marilyn, Don and Linda Combes**

My family and I would like to convey our appreciation to friends, co-workers and ESO for their kind expressions of sympathy during the recent loss of my mother. **Donald Mackay**

My family and I would like to express our sincere appreciation to my friends, co-workers and ESO for their kind expressions of sympathy during the recent loss of my sister. **Matty Taibi**



Breath Of Fresh Air. *Environmental oxygen technician Dan Carroll checks the release valve pressure on a liquid oxygen tank in the liquid oxygen lab behind Plant 2 in Bethpage. The squat 10-liter tanks provide oxygen to pilots during high-altitude/ high-speed flight. Each tank holds enough oxygen to last at least one hour. Photo by Bob Settles*

21st Century Fighter Lures Tops In Industry

U.S. Air Force requests proposals for next step in advanced tactical fighter design

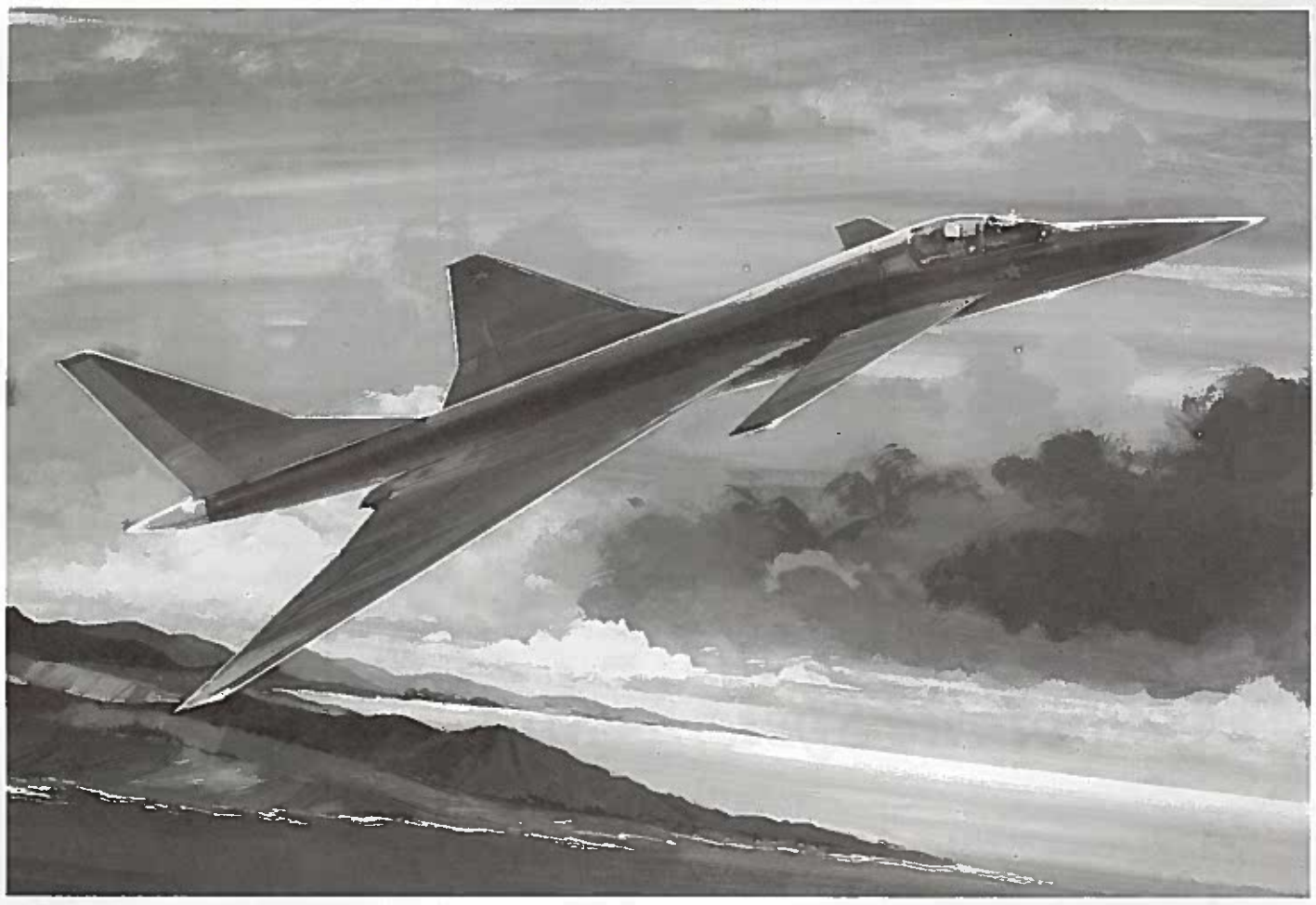
Throughout the past decade, the aerospace industry has been investing time, money and its top engineering talents in the Air Force's 21st Century fighter – dubbed ATF for advanced-tactical fighter.

The ATF is needed in the next decade to combat the rising threat to both U.S. and NATO forces, primarily from the Soviet Union.

The Air Force recently released a request for proposal (RFP) for the concept demonstration/validation phase of the program. As many as four individual manufacturers or teams will receive awards for this phase in June 1986.

The proposal represents the final stage of work prior to full-scale engineering development and production. By 1992, the Air Force is expected to start awarding contracts for the production of 750 aircraft.

"Grumman and the rest of the defense industry have been waiting for a long time for a shot at this project," says Aircraft Systems President Renso Caporali. "ATF represents the culmination of weapon system technology design and development efforts that have been going on for more than a decade throughout the industry."



On The Drawing Board. *This artist's rendition is just one of many designs that Grumman engineers have been working on for the Air Force's next generation of tactical fighters. (Rendition by Pat Hughes)*

> 'Grumman and the rest of the defense industry have been waiting for a long time for a shot at this project.'

About 150 Grummanites from virtually every technical discipline in the company have converged on the Proposal Center in Bethpage's Plant 5 to work on the proposal for the ATF. The technical portion of the proposal is due December 9. The cost and price proposal deadline is December 23.

All seven of the major aircraft manufacturers – Boeing, General Dynamics, Grumman, Lockheed, McDonnell Douglas, Northrop, and Rockwell International – are expected to compete. "Though there are individual bidders going after this phase, I would anticipate that ultimately the production contract will be awarded to a team," says Caporali.

The demonstration/validation phase will last 32 months. During that time, winning contractors will perform wind tunnel tests, subsystem tests and simulations, and build demonstration mock-ups.

The RFP for the advanced fighter reflects recent trends in military purchasing that stress contractor competition to keep costs down, and emphasize product reliability, maintainability and supportability.

"The Air Force – as are all the services – is concerned about high military spending for products that often don't live up to their billing," says John McCabe, ATF program director. "That's one of the reasons for the ambitious ATF requirements. Like any good shopper, the Air Force wants to get the absolute most for their money."

ATF designs are expected to incorporate advanced performance, designed-in reliability and ease of maintenance – within a $35 million per unit fly-away price tag. In addition, a maximum takeoff gross weight ceiling of 50,000 pounds has been set.

"The ATF will embody the latest technology that can be put into an aircraft – and still be affordable," says Caporali. "If it is not significantly better than today's aircraft – at a price that will allow the Air Force to purchase a reasonable number of planes – the ATF probably won't go into production. The problem will be in making a quantum leap in capability and technology while keeping it affordable."

> 'The ATF will embody the latest technology that can be put into an aircraft – and still be affordable.'

The primary aim of the demonstration/validation phase is evaluating the high-risk, high-payoff technologies involved in designing and producing the advanced fighter.

"Manufacturers have a good deal of risk related to cost and scheduling in a program like this," says McCabe. "Much of the advanced technology that will eventually go into the ATF is still under development. The demonstration/validation program is geared towards maturing those high payoff technologies by the time we enter full-scale engineering development."

For over a decade, Grumman and all the other aircraft manufacturers have been doing studies on potential technology for the ATF under Air Force "seed contracts." Using about $10 million of this seed money, Grumman has built a technology base for ATF.

In addition, the company has spent another $40 million of its own independent research and development (IR&D) funds in support of ATF related research.

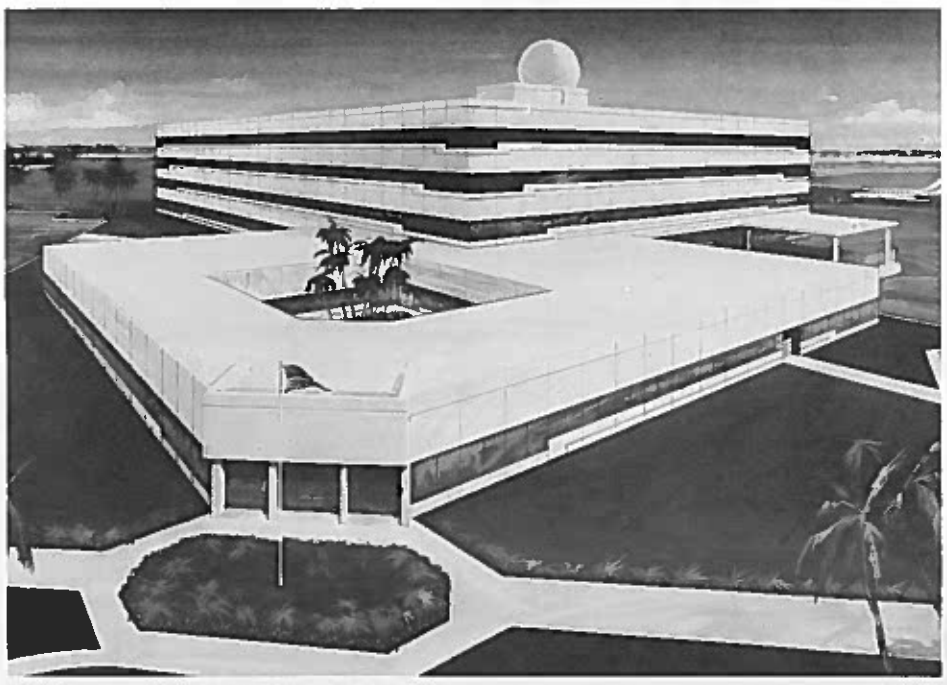
"Any edge we have in this competition will come out of the X-29 program," says Caporali.

"Add the seed contract money and the IR&D funds to the more than $50 million Grumman spent on the X-29 program and you have an investment of over $100 million for technologies that will be tied into the ATF program," says McCabe.

Despite the dizzying figures involved, McCabe says the money was well spent. "Even though the technology demonstrated by the X-29 is openly available through DARPA (the Defense Advanced Research Projects Agency for which the X-29 was built), we are the only company with that experience – successfully integrating and flight testing so many ATF-relevant technologies in a high performance vehicle.

"Equally important is that we have the confidence of the Air Force and in ourselves," says McCabe. "The ATF is going to be a truly awesome challenge from any angle – engineering, manufacturing, scheduling and costs. The success of the X-29 has proven that Grumman is an outfit that can get a high-risk job done. And that kind of confidence is just what you need in a tough competition like this one." ■

City-Slick Effort. *In Woodbury (L.I.), project assistant Janette Lozada and senior programmer-analyst Jeff Ruckgaber of Data Systems review a flow chart of the entire production system of the N.Y. State Welfare Management System (WMS). WMS processes nearly 1.5 million transactions a day handled by the Department of Health and Human Services and manages information on some 2 million past and present recipients of public assistance, Food Stamps and Medicaid benefits. Data Systems wrote the software for WMS. The division also has a team in New York City that is helping manage this huge operation. (Photo by Rich Breunig)*



A New Home For Melbourne Systems. *This is an artist's rendition of the new headquarters of Grumman Melbourne Systems Division being constructed in Florida. It is slated to be completed by the end of 1986.*

Construction Begins At Melbourne Systems Site

On Wednesday, December 4, Grumman held a ground-breaking ceremony at the future site of the Melbourne Systems Division headquarters in Melbourne, Florida.

The $20 million facility is being constructed on a 55-acre parcel leased from the Melbourne Regional Airport Authority. Occupancy of the 188,000-square-foot building is slated for December 1986.

Melbourne Systems was formed when Grumman won the $647-million Joint STARS contract in September. Joint STARS (Joint Surveillance Target Attack Radar System) is being developed for the U.S. Air Force and Army. It will enable U.S. aircraft to detect and track ground forces and then guide aircraft and missiles against these targets. About 600 Grummanites will work at Melbourne. Grummanites assigned to the program will work in Melville, Long Island, while the building is being constructed in Florida.

Attending the ground-breaking ceremony were Grumman President George Skurla, Melbourne Systems President Al Verderosa, and Col. Harry Gillogly III, director of the Joint STARS program at the Electronic Systems Division, Hanscom Air Force Base, Massachusetts. ■

Retiree Obituaries

Marinus J. Agnello of 35 Moody Ave., Freeport, NY, died Oct. 29, 1985. He retired in 1964.

Robert V. Springer of 42 Tanger La., Levittown, NY, died Oct. 31, 1985. He retired in 1977.

Carl Hansen of 7 Harby Dr., Huntington, NY, died Oct. 31, 1985. He retired in 1967.

Joseph C. Porterfield of 205 E. Roberts St., Orange City, Florida, died Nov. 2, 1985. He retired in 1970.

Harry A. Pascoe of 16 Cortelyou Rd., Merrick, NY, died Nov. 2, 1985. He retired in 1977.

Andrew W. Bauer of 850 Maury Rd., Orlando, Florida, died Nov. 3, 1985. He retired in 1965.

Robert E. Coutieri of 88 Bruce Ave., Hicksville, NY, died Nov. 3, 1985. He retired in 1983.

Frank Lee at P.O. Box 463, Selden, NY, died Nov. 4, 1985. He retired in 1982.

William Gianmugnai of 351 Frost Pond Rd., Glen Head, NY, died Nov. 4, 1985. He retired in 1976.

Carl H. Benecke of 114 SE 43 St., Cape Coral, Florida, died Nov. 7, 1985. He retired in 1972.

Rodney D. Payntar of 5 Klaffky Ct., Huntington, NY, died Aug. 6. He retired in 1977.

Nationwide, Grummanites Donate Bounty of Food

The company's first corporate-wide food drive took place the week of November 18, bringing the Grumman name into the battle to end hunger in America.

Long Island Grummanites donated about 8,000 pounds of food, which will be distributed by the Long Island Cares Food Bank. "The total nationwide tally should be close to 11,000 pounds," says Bill Waas, the chairman of the Food Drive committee, "and that number is probably conservative."

Grummanites in St. Augustine, Florida, collected over 650 pounds of food. In Titusville, Florida, they gave about 500 pounds. Grumman Houston gave over 800 pounds of food. In addition, the Grummanites there will hold their annual drive at Christmas.

Grummanites in Glen Arm, Maryland, continued their drive through Thanksgiving week, collecting over 300 pounds of food. They still plan to hold their annual Christmas drive.

Those in Stuart, Florida, filled a 26-cubic-foot bin with food. In Milledgeville, Georgia, enough food was donated to the local Jaycees chapter to feed 15 families.

According to Waas, the drive generated a number of inquiries from people looking to give money or donate their holiday turkeys. Others called seeking help for friends and acquaintances.

Grumman also used its "About Long Island" radio spots to boost the drive. These announcements convinced some 15 other companies on the Island to start their own drives.

"People liked having a local charity get their donations.," says Jim White of Grumman Systems Support in Gaithersburg, Maryland, a computer hardware repair unit of Data Systems. Gaithersburg collected all the food donated by Grummanites at the District of Columbia sites.

There were numerous reports of Grummanites making the drive a group effort. One such incident occurred in Woodbury, Long Island. Joe Coniker and Tom Henry collected $120 from their co-workers in the Systems Maintenance Services group of the Data Systems Division, then headed for a local supermarket. "The food we bought filled three and a half boxes," Coniker recalls. "There were a lot of cans in there."

"The key result of the drive," says Waas, "was not how much we collected, but what people learned about the real problem of hunger in America. Our message reached a lot of people." ■

Photo by Bob Settles

Spinning Top. *In Bethpage's Plant 4, plane captain Tom Scott prepares a rotodome for installation on the E-2C Hawkeye. The rotodome houses the Total Radiation Aperture Controlled Antenna (TRAC-A), which offers improved radar and electronic counter-countermeasure capabilities. The Navy plans $450 million in improvements to the Hawkeye over the next five years.*

Year In Review 1985

January

This month, the first reprocured C-2A Greyhound debuts at a special rollout ceremony in Bethpage. "Each C-2A brings to the carrier the equivalent of several additional first-line fighting aircraft through the timely resupply of parts and personnel – and that's a job only the Greyhound can do," Vice Adm. James Busey, commander of the Naval Air Systems Command, tells the rollout audience.

Grumman's entry for the Postal Service vehicle competition begins its road test in Laredo, Texas. At stake is a $1 billion contract to build 99,150 postal vehicles.

Grumman Houston wins a $17.1 million contract from Sperry to design and build 20 tactical shelter systems for the U.S. Air Force Phase IV program. The Air Force plans to replace all its base support computers worldwide. The Grumman tactical shelters will house the new Sperry 1100/60 computer systems.

Grumman Allied reorganizes its vehicle division and plans to move its Grumman Olson headquarters from Melville, Long Island, to Sturgis, Michigan. The vehicle division includes Grumman Olson, manufacturer of aluminum truck bodies; and Grumman Emergency Products in Roanoke, Virginia, manufacturer of fire trucks and other emergency vehicles.

February

On February 14, Chairman Jack Bierwirth announces that Grumman is being restructured to align it with the specific markets it serves and to reduce costs.

The company forms seven operating divisions: Aerostructures, Aircraft Systems, Allied, Data Systems, Electronic Systems, St. Augustine, and Technical Services. In addition, a Services division will provide commonly used services to all the operating divisions.

Aircraft Systems selects Norden Systems of Norwalk, Conn., to design and produce an A-6F radar system that is more powerful, more reliable and jam resistant than the current A-6E radar.

Data Systems wins a $42 million contract from NASA for a major engineering system called EADS (Engineering Analysis and Data System). It will be maintained by Data Systems at NASA's Marshall Space Flight Center in Huntsville, Alabama.

On February 4, the Grumman X-29 soars to new heights during its second test flight at Edwards Air Force Base in California. On the same day, the C-2A Greyhound makes its maiden flight, taking off in Bethpage and landing at Calverton.

The New York Convention Center awards Data Systems a $500,000 contract to provide facility management and support services for the booking and accounting system Grumman developed and delivered last year.

March

Grumman joins forces with NASA for a series of space experiments which will be conducted aboard the Space Shuttle beginning in 1987. The experiments involve the growth of gallium arsenide semiconductor crystals in a process called directional solidification.

"This agreement represents our first step to-

On The Move. *Bill Sirico, newly elected vice president-Administration of Tachonics, stands outside his home in Sayville with his wife Valerie and son Billy.*

Ready For A High Tech Adventure

Bill Sirico began 1985 working at Great River Operations. "The first half of the year was a little bit confusing," he says. "We had to incorporate Great River into the new Electronics Systems Division. After that, I was heavily involved in getting the new Salisbury, Maryland, facility off the ground."

To top his year off, Sirico was elected vice president-Administration of Electronics Systems' new affiliate, Tachonics. He is getting ready to relocate.

Tachonics is Grumman's latest high-tech venture: a company that will manufacture gallium arsenide microcircuits for future computer systems.

Launching A Career

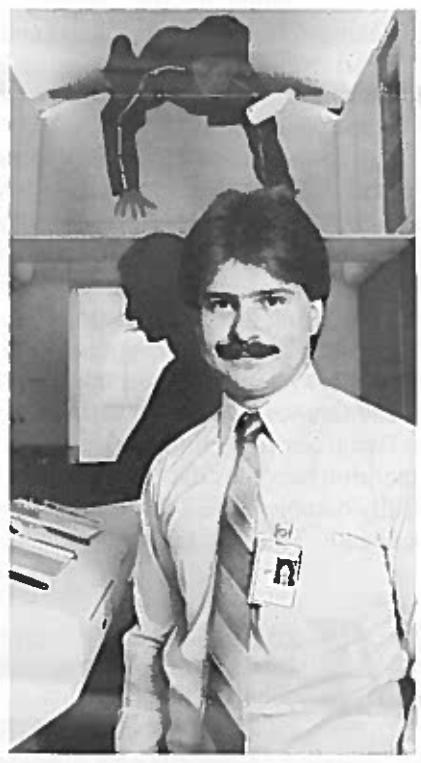
Designing the Space Station will take a lot of talent. Grumman's team is well staffed by people with years of experience under their belts. But, there are also several fresh, new faces on the team. Young engineers like Joe Garcia Jr.

He is an assistant mechanical engineer who graduated from the Polytechnic Institute of New York in Farmingdale in June of 1984. "I didn't really expect this," says Garcia. "I thought I'd be working on an aircraft."

Instead, he's helping to design the habitation module of the Space Station, the unit where the astronauts will eat and sleep, keep in shape and socialize. Grumman is a member of the Rockwell-led team competing to win the contract to build this part of the space station.

"My schooling was a good background, but I had to do more reading and studying," he says. "But I've also found that when you need information, you call people you don't know and they are glad to help you."

Garcia believes he has found his niche in design work. "I've always been fascinated by space and I'm more interested in designing for space," he says. "I hope we win this contract – and I hope I stay with this project and see the Space Station go up."



Joe Garcia Jr.

Tooling Along

"Anyone who is an old tracer machine operator can open his shirt and prove it," says Ed Fontz, a tool fabricator and Class "A" machinist at Glen Arm, Maryland.

Years ago, machinists had to work up close with the high speed cutting tool. Hot steel chips flew from the tool and often stuck to the skin, leaving scars.

"We've seen a tremendous change and every bit has been for the better," says Fontz, who'll turn 64 on December 28. Today, he loads instructions into computer numerical-controlled machines to make complex machine parts for Grumman aircraft.

Not only are the computer numerical-controlled machines safer,

Ed Fontz

they are a lot more efficient, something Fontz isn't unhappy to see. "I'll miss the old days but you've got to go forward," he says. "The competition is fierce.

"At Glen Arm, we've been extremely fortunate in the past few years. While it seems we're a little slow right now, there has been a real upswing in the amount of work here. And my motto is, 'I'd rather climb over it than look for it.'"

To win more work, Grumman is modernizing its machining operations, going from machines that cut by instructions on a coded mylar tape to on-line control of many machines from centralized computers.

Mug Shots

In 1985, on October 1, Grumman opened the first of four offices to process N.Y. State drivers license and car registration renewals.

Located in the lobby of Grumman Headquarters, the office is open on Tuesdays, from 11:30 a.m. to 3 p.m. By the end of November, 494 license renewals and 1,399 registration renewals had been processed.

Another office has been opened in Plant 110, Melville (L.I.). Offices in Great River and Calverton are expected to be operating by year-end.

1985 Year In Review

(Continued from page 5)
ward becoming an active participant with NASA in space commercialization," says Grumman President George Skurla. "It also affirms our belief that the low gravity of space offers great potential for manufacturing."

NASA awards contracts for three of the four Space Station work packages. Grumman is on the winning team led by General Electric for Work Package No. 3, and a TRW-led team for Work Package No. 4.

Work Package No. 3 involves free-flying platforms, attached payloads and science laboratory outfitting. Grumman will work on the lab's control stations, servicing and equipment, and thermal controls. Work Package No. 4 involves the electrical power generation, conditioning and storage systems. Grumman will design the supporting thermal control system.

Six of the 12 Grumman Science and Engineering Scholarships go to sons and daughters of Grummanites.

April

At the April 18th annual shareholders meeting, Chairman Jack Bierwirth explains the rationale for the company's new facilities, new technologies and new leadership. "We have an attractive array of new business opportunities before us," says Bierwirth. "Ironically, the more successful we are in seizing these new opportunities, the more start-up investment we have to make at the expense of short-term profit results."

He also reports that the company has a $5 billion backlog. "I think 1985 will be another good year for Grumman, but it will probably disappoint Wall Street because we are going to continue to invest for the future."

This month, NASA announces that Rockwell International, with Grumman as major subcontractor, will do the systems definition and preliminary design work on Work Package 2, the largest of the four Space Station work packages. This package includes designing the space station's overall structure, the interfaces with the space shuttle, a remote manipulator system and other components.

The Grumman/General Motors entry into the U.S. Postal Service's high-stakes Long Life Vehicle competition becomes the first and only truck to successfully complete the 24,000 mile durability test on schedule. The road test ended on April 28.

May

The finishing touches are still being added to the Data Systems Division's new Production Center in Holtsville, L.I., but some Grummanites begin moving into the computer center over the Memorial Day weekend. The new Holtsville facility will house business operations for internal Grumman users.

Aircraft Systems' composite and bonded materials manufacturing center in Milledgeville, Georgia, celebrates its 10th anniversary.

This month, the first group of Egyptian Air Force personnel begins learning how to operate and maintain the E-2C Hawkeye at Grumman's Bethpage facilities on Long Island. In all, 200 Egyptians will be trained in various aspects of the Hawkeye.

June

Project Sterling celebrates its 20th anniversary, marking two decades of cost-saving ideas.

Saskatchewan Telecommunications Company of Canada orders Data Systems' TELFACS (Telephone Equipment and Loop Facilities Assignment Center System). TELFACS, a software management system, provides phone companies with main-

Thunderous Welcome. *Wherever the X-29 mock-up went during its October-November East Coast tour, from the Pentagon to here, at the Kennedy Space Center in Florida, it created a stir. It was the highlight of open houses at Grumman plants in Florida, Georgia and M demonstrator is expected t Ames-Dryden Flight Resea*

Two-Way Education

Grumman is providing the Egyptian Air Force with five E-2C Hawkeyes through a foreign military sale contract. The first of 190 Egyptians to be trained in Bethpage began classes this past May.

One of their teachers is Lillian Barbagallo, an E-2C systems engineer. "It was the chance to work with the people who will actually use and maintain the software, and I learned as much as they did from the experience," says Barbagallo.

In 1986, Barbagallo will again be at the front of a classroom. She'll teach students from Singapore.

Lillian Barbagallo

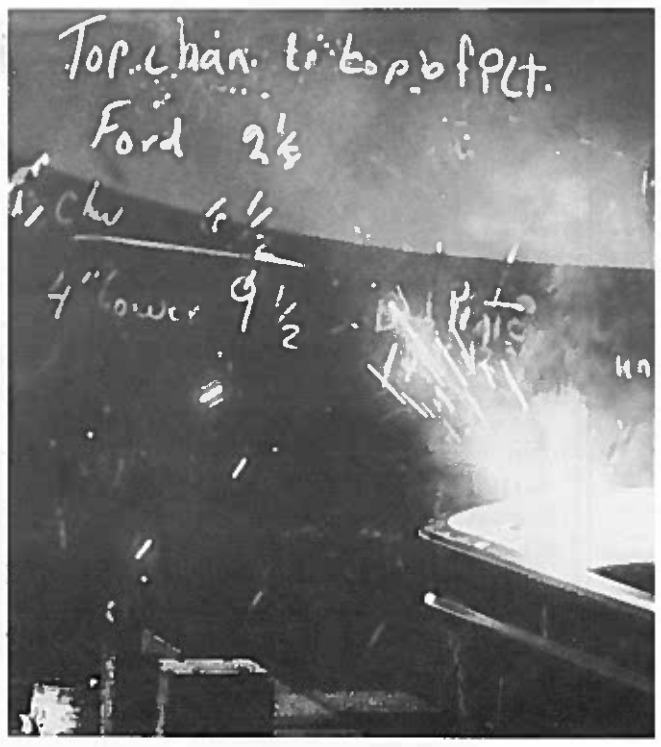
Better From Any Angle

Dick Eisele

The ark-shaped building rising from the woods of Eastern Long Island is right out of the pages of an architectural magazine. But behind the Holtsville Production Center's pretty face is a productive work environment.

"The pleasant surroundings make it conducive to work," says Dick Eisele, assistant director, Database Management Systems for the Data Systems Division. Eisele's group is one of those that moved to the Center from Bethpage earlier this year.

The move east was quite a feat because it went completely unnoticed by end users. The group's other big accomplishment during 1985 was the installation of a new version of the IBM-developed Information Management System (IMS), software that supports the corporate database.



Spares And Repairs. *Grumman Allied is welding two primar Pennsylvania, truck body facility. It is one of the five centers whe in Mayfield not only put new bodies on the old chassis, they r spare parts center for all Olson trucks. The Grumman facility truck bodies.*

Year In Review 1985

and. Meanwhile, the real X-29 advanced technology ak the sound barrier later this month at NASA's Center in Edwards AFB, California.

Mixed Emotions

Herman Schenck

In 1985, Grumman delivered the 42nd and last production EF-111 aircraft to the U.S. Air Force.

"This year has been filled with mixed emotions for me and everyone on the EF-111 program," says Schenck, EF-111A engineering manager. "It's like we were losing an old friend."

However, the Raven team is awaiting word on several proposals submitted earlier in 1985. The largest, called the Aircraft Modification Program – would involve complete modification of the navigation and weapons delivery systems for the Air Force's entire F-111 fleet, including all the EF-111s.

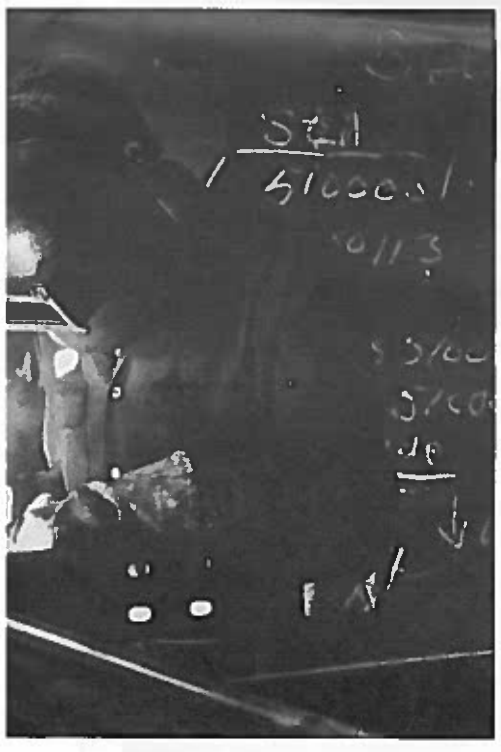
There is also a proposal to put new, more powerful engines on EF-111s, and the Air Force will be issuing RFPs for an electronic warfare upgrade and the replacement of the Raven's analog autopilot with a digital system.

"Landing any of those contracts would keep us very busy over the next couple of years," says Schenck, "at least until the 1988-89 timeframe when we hope to get orders for more EF-111s conversions."

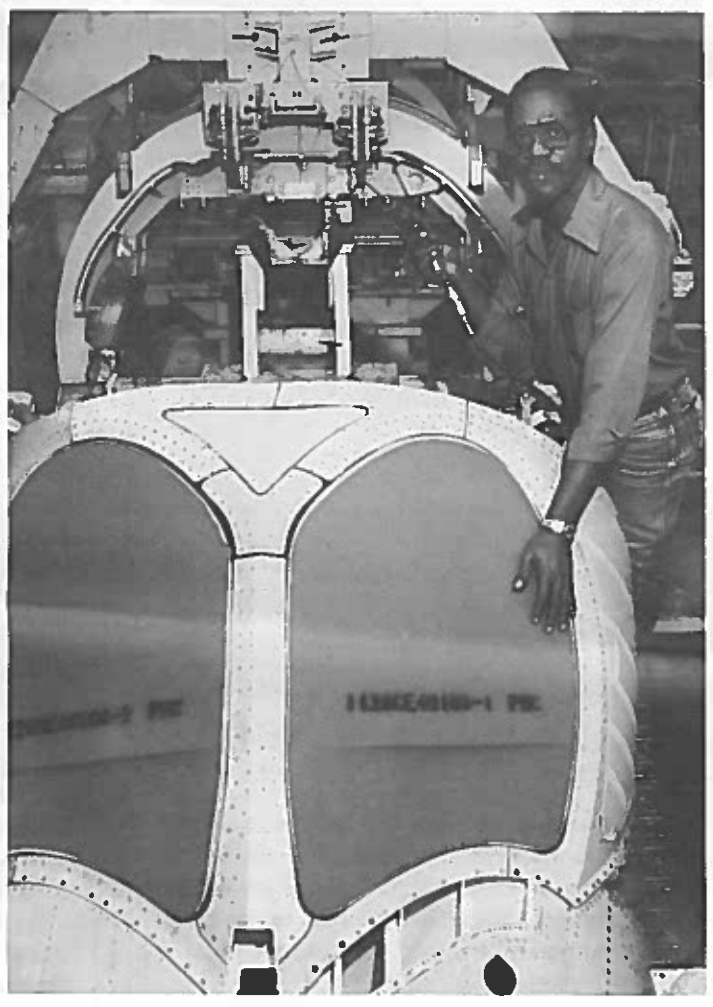
No Needling Needed

Grumman Blood Program will wrap up with a big accomplishment – 10,000 of blood donated by Long Island Grumtes during 1985. Actually, the tally so far ,600 pints, so the year-end total will be in excess of the goal.

The Blood Program recently gave an rary luncheon for the 49 Grummanites donated to Long Island Blood Services' esis program in 1985. In January, 1986, ourne Systems President Al Verderosa, 985 campaign chairman, passes the baton erry Sandler, Data Systems senior vice dent of Information Systems.



rvices under one roof at Olson's Mayfield, d trucks are remanufactured. Grummanites d them. In 1985, Mayfield became the produces new Servmod and Kurbette



Ed Simpkins

View From The Cockpit

The EA-6B Prowler has kept Ed Simpkins mighty busy during 1985. Simpkins is a keyworker and upper cockpit mechanic in Major Assemblies in Bethpage's Plant 2. Above, he's shown working on an EA-6B cockpit.

Simpkins also helps build the Prowler's mid-subassembly. In 1986, this facet of his job is scheduled to change. He'll begin working on the mid-subassembly for the new generation A-6F Intruder, a job he looks forward to.

"It's going to be much busier – no question about it," he says. "We'll be working on close to double the airplanes."

tenance and operation information on all their phones and facilities.

The U.S. Air Force accepts Data Systems' Test Instrumentation System for the Arnold Engineering and Development Center in Tullahoma, Tennessee. TIS is the major component in the center's Aeropropulsion System Test Facility – the largest and most advanced atmospheric jet and rocket propulsion test complex in the free world.

On June 26, Grumman holds a special dedication ceremony at Plant 14 – renamed the William T. Schwendler Engineering Development Center. Schwendler, who died in 1978, was one of the company's founders and Grumman's first chief engineer. The 300,000 square-foot, high-technology building houses the E-2C Systems Engineering and Software Facility, as well as a host of other electronics manufacturing and test operations.

The Grumman/Menasco Inc. jump strut venture progresses so well that the advanced technology landing gear is ready to go into flight test. Using the jump strut, an aircraft can cut as much as 50 to 60 percent off the length of the runway needed for takeoff by jumping five to 10 feet into the air.

Bob Somerville dies of a heart attack on June 16 at the age of 56. He had been president of Grumman Allied from 1976 to 1984. His most recent assignment was Grumman Vice President-Regional Offices.

July

Grumman-CTEC of the Data Systems signs a $700,000 contract with the U.S. Customs Service to develop, install and maintain a computer system for the Office of Intelligence.

Grumman forms a new Electronics Systems company called Tachonics which will design and produce integrated circuits using gallium arsenide. The circuits will be supplied to manufacturers of high-speed electronics systems, and to Grumman itself.

Electronics Systems reveals its plans to open a new facility in Salisbury, Maryland, to manufacture cables for military and commercial aircraft.

August

Aircraft Systems wins a pre-full scale development contract to build the Navy's next generation of automatic test systems, called the Consolidated Automated Support System (CASS). In the next decade, CASS will be the standardized test system for a majority of the electronics used to operate aircraft, ships and submarines. Aircraft Systems' Integrated Logistics Support will manage the program, while Electronics Systems, General Dynamics Electronics and Hughes Aircraft are teamed as major subcontractors. Another team led by General Electric wins a similar contract.

Grumman receives a $1 million contract for space based radar from Rome Air Development Center (RADC). The Phased Array Lens Demonstration Test Program will span 18 months.

Data Systems wins a $350,000 contract from RADC for work on cartographic applications for Tactical and Strategic Systems project. The division will specify software required for digital cartography (map making). The nine-month project is part of an ongoing DoD program to convert paper maps to a digital, electronics format.

Grumman announces that Pearson Yachts, a unit of Grumman Allied Division, is up for sale. Until a suitable buyer is found, Pearson will continue as a fully operational Grumman company.

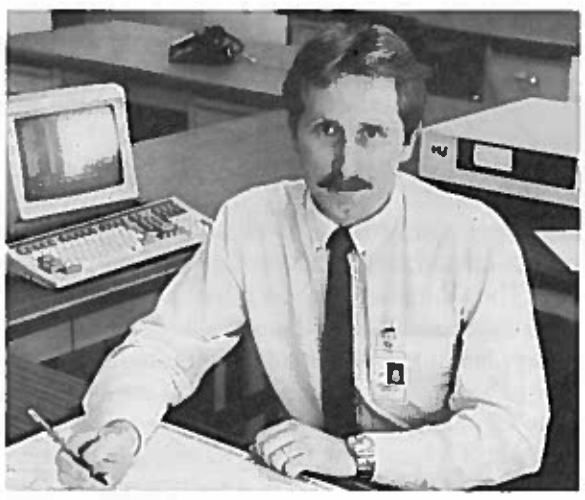
(Continued on page 8)

1985 Year In Review

Raring To Move To Melbourne

Many will remember 1985 as the year Grumman won its biggest-ever Air Force contract – the $657 million contract for development of the Joint Surveillance Target Attack Radar System (Joint STARS).

For Bob Boylan, a software engineer, the win presents the opportunity to get in on the ground floor of a brand new program. "I've never been through the design phase before, and I'm really looking forward to it," says Boylan.



Bob Boylan

Joint STARS will be handled by a brand-new Grumman division, Grumman Melbourne Systems. Boylan doesn't know when he's going to be asked to relocate to Florida, but he's eager to go.

"I'll miss my folks, but I'll come back for holidays," he says. "I won't miss New York taxes and Long Island traffic."

Boylan worked on Joint STARS's predecessor, PaveMover, in New Mexico several years ago, and he views Joint STARS as the most exciting program at Grumman right now.

"Joint STARS will be more than just designing and building avionics," says Boylan. "It's true systems integration, the wave of the future. It's one thing to build black boxes. We'll put everything together and make it sing."

Go With The Flow

It was a year of improved traffic flow for Floyd Marchand, general shop supervisor at Grumman Olson's Sturgis, Michigan, division.

Floyd Marchand

The truck manufacturing facility got its new fleet production assembly line cranking in 1985. And, it helped improved efficiency considerably. "We're up from an average of about 18 trucks per day to 22," says Marchand. "And next year we expect production to be even better."

1985 also brought the relocation of Olson's corporate offices from Long Island to Sturgis. "Having management right here has really helped make things run smoother," says Marchand. "Problems can be solved quickly. Moving the purchasing department to Sturgis has been especially helpful in getting parts and materials shipped to us faster. The faster we get the parts, the faster we can put together the trucks."

Professorial Program. *In mid-1986, Professor Ho Nai Choon of the Nanyang Technological Institute, Singapore, completed on-the-job training in computer aided design and manufacturing (CAD/CAM) at Grumman. In 1984, Grumman announced it would provide training, services, and computer hardware and software to help NTI establish a CAD/CAM center. NTI is part of the University of Singapore. Professor Ho is the first of nine NTI professors who will receive CAD/CAM training at Grumman. They'll be part of the center's faculty.*

Ladder Of Success

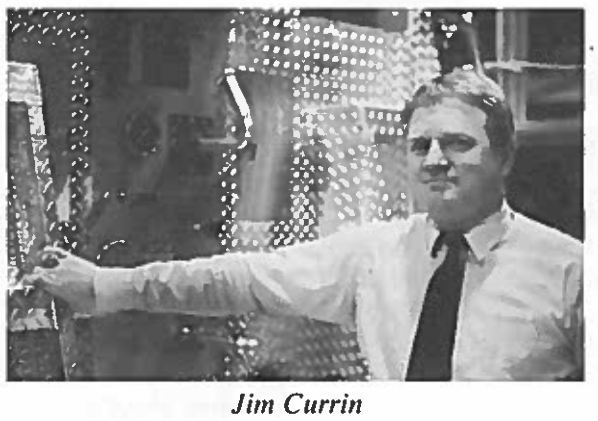
As Jim Currin of Allied's Emergency Products will tell you, designing firefighting equipment is an unusual way to make a living.

Currin is an engineer in prototype and new design at the Roanoke, Virginia, company. In 1985, a lot of his talents went into a new product called the Mid-Mount Aerial – a variation of Grumman's successful aerial platforms. While the old versions are mounted behind the fire truck's axles, the new one is in front of them and is shorter in height.

"In fire stations in older cities and towns, the door clearances are lower, and they need a shorter ladder. We'll be able to reach new customers as a result," he says.

Also hot off the drafting tables is the Straight Stick Aerial, which has no platform on the end and thus weighs less and is less expensive than the other models.

"Grumman Emergency Products is in a business that's small in numbers, but with a lot of competitors," he says. "That forces the company to stay versatile, to meet the needs of the greatest number of buyers. It's an industry that requires a lot of thinking on your feet."



Jim Currin

September

Grumman wins its biggest Air Force contract in company history. The Air Force selects Grumman as prime contractor for the Joint Surveillance Target Attack Radar System (Joint STARS), a system to be developed for the U.S. Army and the Air Force. Worth $657 million, the five-year contract will be handled by a new Grumman operating division called Grumman Melbourne Systems, which will be located in Florida next year.

The U.S. Army recruits the Grumman Electronics Systems Division to develop the Intermediate Forward Test Equipment (IFTE) – the Army's next generation of automatic test equipment. Work will be performed by the Electronics Systems Division's Test Equipment Products group.

Aircraft Systems solidifies its role as the EA-6B electronic warfare systems integrator by winning a $7 million development contract to upgrade the Prowler's tactical jamming system.

The Navy orders $28 million worth of Grumman support – 480,000 hours – at the Pacific Missile Test Center in California. Under this contract, Grummanites at Pt. Mugu Operations will provide software engineering and F-14 Integration Laboratory update, operation and maintenance for three years, commencing October 1985.

Grumman receives a $7.8 million contract from the Air Force/Space Division, El Segundo, Ca. to develop the next generation of mosaic focal plane technology, using concepts developed by Irvine Operations in California.

At the industry's big trade show in Chicago, Grumman Boats shows off the newest addition to its line of recreation and fishing boats: an 18-foot inboard/outboard, the Skidaddle GSX 184I. The new boat comes with a 120 horsepower engine and offers a 140 hp engine option.

Allied's Emergency Products in Roanoke, Virginia, delivers eight more Grumman trucks to Petroleos Mexicanos (PEMEX). They will be used to protect Mexico's critical natural resource – oil.

Breaking New Ground

Sal Sakellarides

Sal Sakellarides is Data Systems' director of Manufacturing Systems. "We broke a lot of new ground in 1985, along with the rest of the manufacturers in the United States."

At Great River, Manufacturing Systems instituted payroll feeds from the Cost Tracking System so there aren't any time cards. Milledgeville in Georgia has been using automatic payroll feeds since August. "We also set up the telecommunications link between Great River and Salisbury, Maryland," he says.

Sakellarides and his group will be facing plenty of industrial automation challenges in 1986, too. "The biggest will be designing the computer system to support Great River's effort to become the electronic factory of the future," he says.

Another big push in 1986 for Manufacturing Systems will be in Computer Integrated Manufacturing – the eventual centralization and automation of all Grumman detail parts fabrication within Plant 3.

Year In Review 1985

October

Electronics Systems signs a $90 million contract with the Navy for 41 RADCOM (radar communications) testers.

Aircraft Systems gets two development contracts from the Army for the OV-1. One is for a stall warning system for the Army's all-weather surveillance plane. The other is for an improved anti-icing system.

Technical Services Division will service simulators and trainers for the Navy under three five-year contracts worth $12.4 million.

The Grumman F-14 Tomcat makes the covers of *Time* and *Newsweek* for its part in the interception of the Egyptian airliner carrying four hijackers of the cruise ship Achille Lauro. Four F-14s, two E-2C Hawkeyes, and two KA-6D tankers – all from the U.S.S. Saratoga – participate in the mission.

Ray Harris

A Year Of Transition

At Stuart Operations in Florida, 1985 has been a year of transition or the OV-1D Mohawk program. In June, the Army issued its final contract for conversion of older OV-1Bs into the latest OV-1D configuration. Development work is now underway on new stall warning, de-icer, and electrical power systems.

For Ray Harris, a Mohawk plane captain, 1985 has been quiet – save for a two-month trip north to Calverton. "Changes were made to the antenna housings on the Mohawk fuselage and the aircraft was flight tested using Calverton's radar facilities and automated telemetry system (ATS)," says Harris.

In 1986, one Mohawk will be involved in joint Army/Grumman flight testing of new engines.

November

Grumman and the Navy reach an agreement to resume Navy acceptance of the F-14 Tomcat. The agreement includes the strengthening of an F-14 fuselage bulkhead to improve its service life.

The week of November 18, Grummanites band together to support a corporate-wide food drive.

Technical Services Division prepares to bid on the last of three major operations programs developed by NASA to streamline the processing of Shuttle missions at the Kennedy Space Center, Florida. Called Payload Ground Operations, it gives the winning contractor the responsibility for all payload work and is worth about $50 to $60 million a year in the beginning. It will be a 15-year contract in three-year increments.

St. Augustine signs a follow-on contract with the Navy for continued conversion/modification work on the KA-6D tankers. About $1.5 million worth of work will be done on each of the dozen tankers covered in this contract.

Waiting To Hear

Trudy Willingham

"We spent much of 1985 holding our breath," says Trudy Willingham, project engineer for Grumman Olson's Long Life Vehicle, (LLV). Grumman had been waiting to hear the U.S. Postal Service's test results of its prototype LLV.

"Our vehicle got great marks on the road test," says Willingham. "That puts us in the driver's seat, if you'll pardon the pun."

The LLV team is currently working on a third unit for testing next year. Those tests will be conducted with General Motors Corporation, subcontractor for the LLV's chassis.

Kristen Stephens

A Real Tuition Buster

In 1985, Kristen Stephens earned her bachelor's degree in math/computer science from Florida's Rollins College – thanks, in part, to the Grumman Technical Services Division's tuition reimbursement program. She is one of 195 Grummanites at the division to take advantage of the program in 1985.

Because Technical Services is subcontractor to Lockheed at Kennedy Space Center, it has an identical tuition reimbursement program. NASA encourages liberal programs since it relies on contractors to supply a high-tech work force.

Stephens attended Rollins' Patrick Air Force Base branch, which is popular with employees at KSC and service people from the base.

"Rollins is a private college, so tuition is very high," notes Stephens, a data analyst in Firing Room 2 at KSC. Stephens begins masters studies this winter. Her eventual career goal is computer or systems engineering.

While the Allied, St. Augustine and Technical Services Divisions have their own programs, the other Grumman divisions participate in the corporate tuition reimbursement program, which served over 2,700 Grummanites in 1985.

Eastern Exposure

Although Grumman has sold Japan several E-2C Hawkeyes, cracking the Japanese market has been anything but easy, says Norio Endo, director of industrial development for Grumman International in Tokyo.

Endo has been with Grumman International for two years, most of that time telling the Grumman story to business and government leaders in Japan. "The fact that a number of Japanese multinational companies are interested in sitting down and talking with us is a truly impressive achievement," he says.

"Over this past year, 60 Grumman people and their families have lived and worked in Japan to support the E-2C. Each Grummanite has been literally a Grumman ambassador, providing people here with an example of what the company is all about," says Endo. "Because of their hard work, Grumman's values have come across to the Japanese."

Eastern Ambassador. *Norio Endo, director of industrial development for Grumman International in Tokyo, Japan, is pictured with his daughter Kiyomi (left), and his wife Kim and son Bill (right) atop the Sulphur Mountains in Hakone, Japan.*

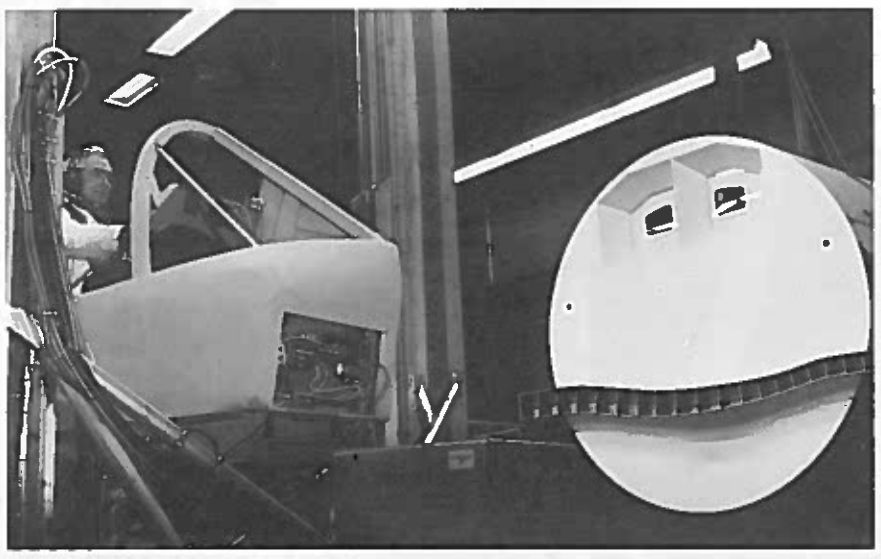
Can You, Canoe? *Even though the market for canoes has remained steady, Luella Palmer (above) and fellow Grummanites at Marathon, N.Y., will build over 6,600 Grumman canoes this year. In 1986, the Palmer family plans to buy one, too.*

Ready For Overhaul

Paul Masters was recently promoted to electrical leadman on the KA-6D tanker and A-6 Intruder Rewing programs at St. Augustine. During this year, Masters and his crew began installing the A-6's Weapon System Control Improvements.

Both programs are scheduled to wrap up in 1986, and Masters is ready to tackle a new assignment.

He's also optimistic about the prospects for new business at his division – and in the corporation as a whole. Says Masters, "with the work force we have, we could tackle anything in the way of overhaul work."



VTOL Ups And Downs. *Chief technician Walter Zywan is strapped into a cockpit simulator in the Large Amplitude Research Simulator (LARS) lab. The lab is located in the William T. Schwendler Engineering Development Center in Bethpage. Zywan is using the cockpit simulator to conduct control tests for the Vertical Take Off and Landing (VTOL) program. The tests simulate landing a VTOL aircraft on the rear deck of a destroyer. The cockpit simulator can move in six different directions and can create the effect of real g-forces. At right is the exterior of the lab's space station module mock-up. Its toothy smile is a target for a remote control camera used in research tests of the Orbital Maneuvering Vehicle (OMV) – a remotely controlled satellite being developed to deliver and retrieve other satellites in space.*

Obituaries

Martin L. Merrick, Grumman Data Systems Institute, Plant 48, died Oct. 27 at the age of 37. He had been with the company since 1975 and resided at 142 King lst Walk, Brooklyn, N.Y.

Mario DiDomenico, Support Equipment, Plant 5, died Oct. 29 at the age of 64. He had been with the company since 1958 and resided at 181 Beaver Dam Rd., Brookhaven, N.Y.

Salvatore A. Sarbella, Production, Plant 106, died Nov. 10 at the age of 61. He had been with the company since 1968 and resided at 6 Ambrose La., Northport, N.Y.

Brenda H. Dickson, Honeycomb Layup & Bond, Plant 66, died Nov. 8 at the age of 37. She had been with the company since 1978 and her address was P.O. Box 433, Rt. 1, Sparta, Georgia.

Dominic A. Liantonio, ILS Technical Illustration, Plant 15, died Nov. 14 at the age of 64. He had been with the company since 1974 and resided at 88 South Millpage Dr., Bethpage, N.Y.

Warren Thompson, Final Assembly Inspection, Plant 6, died Nov. 26 at the age of 62. He had been with the company since 1962 and resided at 73 Old Post Rd., E. Setauket, N.Y.

Weather Emergency Numbers

'Tis the season for foul weather. Snowstorms in the North and cold snaps in the South can occasionally cause Grumman plant closings or delays in opening.

Most Grumman facilities have set up special weather emergency telephone numbers for people to call to find out if Grumman is open for business. Some plants have also made arrangements with local radio and television stations to announce closings. Here is a list of telephone numbers and radio stations:

On Long Island:
Bethpage - 349-9400
Holtsville - 737-7026
Bohemia, Calverton, Melville and Great River - 364-2266
Woodbury - 349-9687

Grummanites on Long Island can also set their radio dials to: WGSM 740AM; WGBB 1240AM; WALK 1370AM, 97.5FM; WNYG 1440AM; WGLI 1290AM; WBLI 106.1FM; WLIM 1580

Off L.I.:
Stuart, Fla. - (305) 287-5300, Ext. 333
St. Augustine, Fla. - (904) 829-2501
Titusville, Fla. - (305) 268-8400
Salisbury, Md. (301) 543-1483
Glen Arm, Md. - (301) 592-7022
Milledgeville, Ga. (912) 452-8555; WMVG 1450AM/WKZR 102FM
Houston, Tex. - (713) 481-4350
Arkadelphia, Ark. - (501) 384-5390
Marathon, N.Y. - Cortland radio station WKRT 99.9FM
Montgomery, Pa. - WILQ 105FM; 104 FM; WMLP 1380AM; WLYC 1050AM
Mayfield, Pa. - WARM 590AM or WEJL 630AM
Sturgis, Mich. - (616) 651-2380
Roanoke, Va. - (703) 982-6666
Portsmith, R.I. - WPRO 630AM, WLKW990AM, 105.5FM, WPJB 105FM
Irvine, Calif. - (714) 845-1343
Washington, D.C. - (703) 750-1335

It Could Pay To Fly Cheap

Cost-conscious travellers get chances for free vacations

Would the opportunity to win a free vacation entice you to search for the lowest airfare when you travel on company business?

Grumman has saved close to a half-million dollars this year in travel expenses as a result of a trial program called TRIP, or Travel Reservation Incentive Program.

Through TRIP, the Grummanite who opts to fly at a reduced fare receives a chance, depending upon the amount saved. Vacation prizes awarded during 1985 included trips to Bermuda, San Francisco, Arizona, and the Caribbean Islands.

The trial program was conducted within what used to be the Aerospace subsidiary. Beginning in January, 1986, all Grummanites will be eligible to participate. Reservations must be made through the Grumman-approved travel agency, depending on where you work.

"The cost savings this year have exceeded our expectations, in view of the fact that participation is strictly voluntary," says Al Wallace, director of Travel Operations. "We figured if we could save $200,000, we'd be in good shape. Thus far in 1985, we have saved $478,000. We expect to go over the $500,000 mark by the end of December."

Here's how TRIP works. A reservationist at the Grumman-approved travel agency informs the traveller of ways to reduce airfare costs. If the traveller agrees to a cost-saver, he or she is eligible to participate in the TRIP drawing.

Some examples: night flights, booking a cheaper connecting flight instead of a nonstop, flying coach where company rules permit business or first-class travel, or booking a super saver fare, where travel requires a Saturday-night stayover.

The traveller receives one chance for every $100 (or portion thereof) in airfare saved, plus an entry coupon. The latter must be filled out and returned to Travel at least two days before the drawing date (the last Friday of each month). If received after that, it will go into the next appropriate drawing.

There are monthly, quarterly, and annual prize drawings. Secretaries, who often make departmental travel arrangements, may receive one chance per cost-saving trip booked, and are eligible for monthly and quarterly drawings.

In addition, a special year-end drawing is held just for non-travelling employees. All employee permanent numbers go into a lottery system. If a traveller is drawn, the drawing is repeated until a non-traveller is chosen.

Monthly TRIP packages generally consist of airfare for two, a weekend's lodging, car rental, and $100 spending money. Quarterly winners receive a week-long trip for two and $200 spending money. The annual award is a deluxe, one-week, all-expenses-paid trip. Another week-long vacation goes to the Grummanite who saves the most money during the year.

"This year, the winners, including secretaries, have been from all areas," says Janet Fiore, TRIP administrator. "Everyone has been involved – from the field sites, as well as the off-Long Island plants.

"December will be our grand finale. We'll be announcing the monthly, quarterly, annual, non-traveller, and the highest saver awards," Fiore says. "The monthly trip scheduled is a weekend for two at The Point resort in Phoenix, and the quarterly trip is a one-week vacation for two at Mullet Bay in St. Maarten.

"The first annual trip is a one-week cruise to the Caribbean Islands. The special non-traveller award is a week-long stay for two at Divi Divi in Aruba. We expanded this year's program to include an additional trip for the traveller with the highest savings – a one-week vacation for two in Hawaii."

"TRIP is the first program of its kind," says Wallace. "There have been a lot of incentive programs implemented at other companies, but none that involves everyone.

"We've gotten inquiries from companies all over the nation – including Eaton, Ciba-Geigy, McDonalds, Holiday Corporation, Texaco, and Hughes Aircraft. And we have been given notoriety in the industrial travel journals," he continues. "A few have established programs derived from our concept."

If you'd like additional information or a travel package detailing the program, contact Janet Fiore at Ext. (111) 58612. ■

Fa, La, La, La, La

Next week, the members of Grumman Employees Band will be entertaining fellow Grummanites at the following sites:

Monday, December 16, Plant 106.

Tuesday, December 17, Headquarters.

Wednesday, December 18, Plant 1.

Thursday, December 19, Plant 2.

Friday, December 20, Plant 5.

All concerts take place during lunch periods.

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Service Milestones

45

John P. Bartsch, Controls (2)
Patrick J. Lacombe, Ctr. Sect. Subassembly(2)

40

Eugene Earley Jr., Controls (2)

35

George Stajk, Templates (2)
Roger B. Conklin, Adv. Proc. Mgmt. (25)
John Mockovciak Jr., Prog. Mgmt. Space (25)

30

Peter Balaško, Prod. Rel. & Anal. (2)
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Leonard L. Auchenbaugh, Flt. Ops. (4)
Donald F. Martin, A-6 Upgrade (6)
William Palmer, Rec./Shipping Insp. (6)
Edward T. Barron, Marketing (9)
Gerard A. Beaudoin Jr., Quality Lab. (10)
Frank F. DiFranco, Plastic/Plaster Tooling (11)
Bertram H. Dawkins Jr., Controls & Mech. (25)
Rudolph Adornato, Flt. Cont. (25)
John W. Brook, Aerophysics (35)
Robert J. Coletti, Des. Eng. Mgmt. (35)
Vernon C. Guild, Mfg. Prog. Mgmt. (47)
Kenneth R. Crow, Qual. (77)
Steve Reichardt, Houston

25

Clement T. Joie Jr., Sub-Assy. Maj. (1)
Robert Zelenka, Maint. (3)
Dorothy A. Tveter, Office Serv. (5)
William E. Kallansrude, Radar (25)
Norman C. Peele Jr., Research (26)
Robert G. Huml, Instruct./Anal. (39)
Eva R. Bauer, Training Sys. Prog. (47)
Milton A. Wegler, Prog. Contracts (77)
Frank Trimble, Tech. Ops. (77)
Joachim Dietzsch, Production (88)
Bernard Muller, Production (88)
James C. Reed, CASS Program V. P. (106)
Manuel C. Faria, Pearson Yachts

Let Us Know

We don't want to do all the talking.

We'd like to know what you think about the things you see in these pages, and what you see going on in the company. Serious comments, questions and complaints are welcomed, and will be answered by the people most qualified to respond. We'll get back to you promptly with their replies. If the topic is of general interest, we'll print it.

Letters to the editor should be addressed to *Grumman World*, 1111 Stewart Avenue, A22-GHQ, Bethpage, N.Y. 11714, and should include your name and address. Letters may be edited for clarity or space.

Next Issue:
Grumman World
January 17, 1986

C. T. Joie Jr.

R. Zelenka

D. A. Tveter

W. E. Kallansrude

E. R. Bauer

M. A. Wegler

F. Trimble

J. Dietzsch

B. Muller

J. C. Reed

M. C. Faria

One Man's Fowl Is Another Man's Fancy

Grumman retiree Edmund Rabut loves birds. Lots of them.

"Many people keep parakeets or finches in little cages in their homes," says Rabut. "But if you really love birds – well, then you get a little larger cage, add a few more birds, and maybe even start a collection."

His idea of a bird cage wouldn't fit into most living rooms. No gilded bars and old newspaper lining for his collection of feathered friends. Instead, an outdoor aviary stands 12-feet tall and covers 1,250 square feet of his backyard in Huntington, Long Island.

The giant wire mesh and wood frame aviary is fully landscaped to provide the birds with a simulated natural environment. The aviary's center feature is a large, fiberglass, freshwater pond for Rabut's collection of rare water fowl from around the world. It is also the drinking-water supply for all the other birds in the aviary – parrots, doves, peacocks, and pheasants.

Rabut bred most of the ducks himself. Once he even raised an entire flock of mallards on a large cement lake he built next to the aviary.

He notes that mallards are food ducks eminently suitable for the dinner table. "When the cement cracked, I finally had to drain the lake," says Rabut. "I released most of the mallards in the wet lands on the North Shore, but I'll admit quite a few ended up on our dinner table." Corn-fed and pampered on the back yard lake, Rabut says they were "quite delicious." With the exception of the mallards, Rabut's birds are for viewing and not for eating.

Rabut worked for Grumman for 37 years as an administrator on a variety of programs, including the Lunar Module program and the Ben Franklin submarine.

During his early Grumman days, Grummanite Harry Vreeland, a noted wildlife artist and carver, would drop by regularly to sit and sketch in the aviary. "In fact, we've had a number of well known artists and photographers from the Audubon Society and other wildlife groups and magazines up here from time to time."

Considered one of Long Island's foremost authorities on the breeding of rare water fowl, Rabut used to give slide shows and seminars on the subject.

"We don't keep in touch with all the zoos and clubs and societies anymore," he says. "It got to be too much running around. Now, we just relax and enjoy the birds. It's a little less hectic, but I think the birds like it better this way, too." ■

Fine Feathered Friends. *Grumman retiree Edmund Rabut and his wife Marie enjoy feeding their flock of rare waterfowl. Both can identify each individual bird in the collection by its distinctive and beautiful markings.*

Retirees

On behalf of our fellow workers, *Grumman World* salutes the following Grummanites for their contributions to the company and wishes them well in their retirement. Those who have recently retired are:

John A. Allen (30), Willard H. Blaskopf (110), Edward T. Brazill (9), Louis N. DeAngelis (110), Alexander T. DeDora (30), Marie A. Forte (30), George A. Gajewski (30), John H. Gutkes (1), Andrew J. Hillery Sr. (1), Edna M. Linitz (30), Dominick Ardolina (12), George Baker (2), Albert H. Bechhoff (21), Robert Bennett (2), George Bixby (6), Anthony Chettuck (12), Joseph Donato (3).

Joseph Fischer (6), Henry LaJoie (12), William C. English (2), Jane Marino (30), Charles Bogardus Jr. (17), Joseph A. Gurney (112), Frederick Steenson (21), Louis Waldeck (21), Gladys Weidenfeller (24), William E. Werner (17), Inez English (3), Martin Goldberg (5), Robert Milhaven (3), Walter Moore (12), Russell L. Owen (2), Helen Pellicio (1), Salvatore Ricci (3), William Rowehl (2), Stanley M. Saffron (35), Percy Smith (3), William Ashley (3), Henry G. Buschman (5).

Joseph E. McCarthy (6), Elizabeth Coduluto (2), Mary DeWitt (21), John J. Ege (6), Frank S. Kelly (1), John E. Jansch (6), Joseph Morgan (77), George A. Grant (15), Leonard E. Harmon (35), Robert Ketcham (30), Mary T. Holloran (30), Edward A. Tolliver (21), Marjorie E. Steward (2), Paul Steward (2), Agnes Sabatino (35), Walter Livingston Jr. (77), Stephanie A. Stallings (77), William H. Wagner (77), Claud K. Chamblin (77), John A. Borgen (77), Philip H. Williams (35).

John W. Doyle (12), Wilfrid R. Howell (1), Theodore F. Walker (77), Edwin Moss Jr. (18), Mary Reedy (30), Kenneth Schakenback (30), Albert R. Steele (17), James R. Stegmeier (30), William Tennant (30), Perry Ungerland (30), Anthony Varvaro (2), James V. Adams (7), John D. Cecutti (40), James H. Meagher (6), Robert S. Gardali (4), Gerard W. Kaufhold (289), Louis R. Klein (2), Charles E. Kroupa (6), Thomas J. McKeegan (2).

Irving Solomon (2), Frank R Tobin (2), Edward Ratcliff (2), Dominick R. Virgilio (25), Robert W. DeVerna (40), George F. Woessner (6), Henry J. Schneider (6), Lillian L. DiBernard (5), Alfred Albanese (44), Tolman Sullivan (77), Barbara O'Connell (111), Eugene R. Piwowar (4), Eleanor Leftenant (15), Michael A. Barone (5), Joseph C. Hejl (2), Harman Rigby (5), Fred Ruggiero (6), Arthur E. Schwenker (17), Earl W. Albright (30), Marjorie E. Oliver (30).

GrummanWorld
December 13, 1985

(Photo by Rich Breunig)

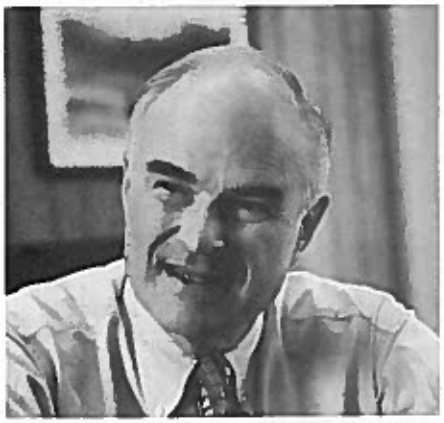
Lilliputian Layout

Though it looks like a toy Santa might leave under the tree, this is a scale model of the future layout of Plant 3 in Bethpage.

Industrial engineer Darryl Burgess is working on one small segment of the Plant 3 model. Even though each quarter inch equals a foot, the model stretches 30 feet long and 15 feet wide. The model helps engineers analyze the placement of machinery and computer rooms, and visualize the flow of work through the plant.

Plant 3 is undergoing a major modernization and industrial automation program. When the work is completed in 1989, the plant will be a Computer Integrated Manufacturing (CIM) facility. CIM is a joint effort by Aircraft Systems and Data Systems to make detail parts manufacturing extremely efficient. From raw material to the finished detail parts, the scheduling and flow of all the work on the shop floor will be managed by central computers. Also, the computers will supply up-to-date engineering and manufacturing information.

A Letter From The Chairman



The year is drawing to a close.

It has been a remarkable year for this company; we've had the gratifying experience of seeing most of our plans work out the way we wanted them to. We've made huge investments in our future – in facilities, technologies, and products; our research has given us the capability to build our products right, on time, and for the right cost.

But we're not home free. The tricky part now is to follow through – and there are a few things working against us.

Our programs are proliferating, and that puts more and more of an economic strain on us. It also strains our personnel resources: highly qualified engineers and technicians are in short supply, and we have stepped up our recruitment efforts. But Grumman has a lot to offer a young engineer – advancing technologies, an atmosphere for professional growth – and I am confident that we will be able to attract the talent that we need.

With more programs and larger facilities, our energy needs are greater than ever. We are paying electric rates to Long Island Lighting that are 73 percent higher than the national average. We will attempt to deal with that problem by building our own generating plant to take care of our essential needs in the Bethpage complex. This is a difficult and complicated undertaking, but one that will help us remain competitive.

But some other difficulties are beyond our control.

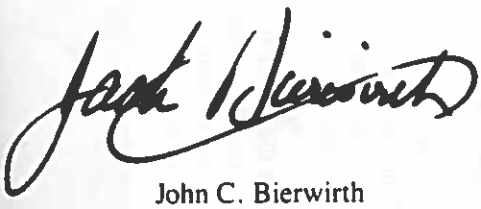
The Treasury Department is changing the rules on tax schedules, and Grumman will be paying deferred taxes and current taxes simultaneously for the next two years.

The Department of Defense is reacting to its own political realities, and progress payments to contractors have been reduced from 90 to 80 percent. A progress payment is the money paid by the government on a contract, based on costs incurred. Because of this change, Grumman will have to borrow an additional $100 million this year.

On top of that, the Department of Defense is applying more pressure on profit margins, and pressing for increased competition at all levels of a job. This creates the risk that any project we have come up with through our own research could be offered to someone else.

We have built a solid foundation for the Grumman of the 1990's, a company that will be twice the size of the Grumman of today. We have worked hard to create our opportunities; now, we must work hard to make sure we can take advantage of them.

A lot of Grummanites have worked long hours this year, and we may have to do the same in 1986. But the holidays are almost here, and I do hope you will have some time to relax with your families and friends. I certainly wish all of you the joy and peace of the season, and good health and happiness for the new year.



John C. Bierwirth
Chairman

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